DOCUMENT RESUME

ED 156 140 IR 006 071

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TITLE Shelf Space Projection Survey.
PUB DATE 77
NOTE 22p.

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS Books; *Library Collections; Periodicals; *Research Projects; *Space Utilization; Surveys; Tables (Data); *University Libraries
IDENTIFIERS *State University of New York

ABSTRACT

This study of the present and projected space requirements for book and periodical collections of the State University of New York Libraries, excluding community colleges, is based on the assumptions that the annual rate of acquisitions and the present space dedicated to book and periodical shelving remain constant. The survey questionnaire requested information on the linear measure of standing or planned shelving and the number of completely empty shelves, as well as the figures on holding provided to HEGIS. Data gathered and projections based on them are presented in tables: (1) linear feet of shelving, estimated holdings, present volumes per foot, additional capacity, and date of full capacity for each respondent; (2) estimated dates of full capacity; and (3) average number of volumes per foot shelved on filled or partially filled shelves. (MBR)

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SHELF SPACE PROJECTION SURVEY

by

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SUNY COUNCIL OF HEAD LIBRARIANS

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SUNY Council of Head Librarians

Shelf Space Projection Survey

At its meeting of February 11, 1977, the Executive Board of the SUNY Council of Head Librarians requested that a survey be made of the space requirements for the book and periodical collections of SUNY institutions excluding the communtiy colleges. Dr. C. James Schmidt, Director of Libraries at SUNY Albany, asked John Camp and Karen Wittenborg to conduct this survey.

To gather the necessary information, questionnaires were mailed to all the four year colleges and university centers in the SUNY system. In the interests of standardization we requested that the figures on holdings be those provided to the Department of Health, Education, and Welfare's Higher Education General Information Survey hereafter referred to as HEGIS. Table I on pages 7-12 summarizes these responses and estimates dates of full capacity for the 40 libraries for which sufficient data was obtained. When possible branch libraries were treated as discrete units but when no break-down of collection totals was available main libraries and their branches had to be treated as single units.

Assumptions

The projections based on this survey assume that two controlling factors will remain constant: 1) the annual rate of acquisitions[1]; and 2) the present space in each library dedicated to book and periodical shelving.[2]

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[1]Annual acquisition rates were established for each library by averaging the numbers of cataloged volumes added to the collection in the years 1973-76 as reported in HEGIS.

[2]We have excluded consideration of microforms and government documents for several reasons. Microform storage varies widely depending on its form (i.e. roll, fiche, card etc.) and the local manner of housing (i.e. files, shelves or cabinets). This is impossible to translate into menaingful space requirements. Government documants were reported to HEGIS inconsistently; some years in linear feet, other years in volumes.

Any significant change in either of these factors will of course change the projection based on them. We hope that institutions experiencing such changes will use the formula we have developed here to revise their projections.

LINEAR VS. AREA MEASURE. It was necessary to choose a method of determining the book capacity of stack space that would be: 1) as accurate as possible; and 2) easily applied to the collections of all the participating libraries. A review of the literature shows that previous studies of stack space used space factors based on either linear measurement (total linear feet of shelving) or area measurement (total square feet of stack areas). Several of these factors were applied to sample areas within the Main Library at the University at Albany in order to test the validity of their results and the ease of their application.

One of the area factors tested was the one used by the Office of the Vice Chancellor for Campus Development.[1] While it met the criterion of ease of application, the resulting space projections were not accurate. It projected for Albany's present collection a requirement of 16% more space than is currently available in the library. Yet we know that more than 22,000 linear feet of shelving are still empty.

The area factors used by Metcalf[2] and Ellsworth[3] fail to state their assumptions as to stack aisle widths, range lengths, or column spacing. Yet such dimensions vary widely among libraries and often within a given library. So the use of these factors would require participating libraries to measure

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[1] State University of New York. Office of Vice Chancellor for Campus Development. State University of New York Space Projection Criteria for Capital & Long Range Facilities Planning Purposes, p.1.

[2] Keyes D. Metcalf, Planning Academic and Research Library Buildings (New York: McGraw-Hill, 1965), pp. 394-396.

[3] Ralph E. Ellsworth, Planning Manual for Academic Library Buildings (Metuchen, N.J.: Scarecrow Press, 1973), pp. 110-111.

not only the areas occupied by stacks, but also to measure aisle widths, range lengths, and column spacing.

On the other hand, the linear measure of standing or planned shelving can be used to measure book capacity without considering other variables. When linear measures were applied to the collection at the University at Albany, they were convenient to work with and resulted in a high degree of accuracy. When applied to the stacks at SUNY Albany the factor of 7.5 volumes per linear foot was found to be a convenient and reasonably accurate estimate of shelf capacity.

MEASURING FULL AND EMPTY SHELVING. In gathering the information used in this survey we have tried to balance two conflicting concerns. We wanted the most complete and accurate data available, but we also wanted to avoid unrealistic and time consuming demands on the staffs of participating institutions. We therefore limited our requests for space measurements to the number of feet of shelving standing or projected and the number of completely empty shelves. While an estimate of remaining capacity based solely on a count of empty shelves is not as precise as a count which would include the empty space on partially filled shelves, there are two factors which make it more accurate than it might appear to be initially. If all volumes in circulation were returned at once, the empty space on partially filled shelves would be significantly reduced. And although the standard estimates of the total capacity of open stacks are based on 85 to 88% of their shelving[1], some shelves in many libraries are more than 88% full.

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[1]Metcalf, op. cit., 155; Ellsworth, op. cit., 30.

ESTIMATING SHELF CAPACITY. Most of the standards given in Metcalf[1] and Ellsworth[2] (5.96 to 6 volumes per linear foot) are unrealistically low for determining maximum working capacity. The table from Metcalf reproduced below appears to be more realistic, but for most libraries there is no practical way to break down the HEGIS figures on holdings into the eleven subject categories it lists.

VOLUMES PER LINEAR FOOT OF SHELF
FOR BOOKS IN DIFFERENT SUBJECTS[3]

Subject	Volumes per foot on shelf
Circulating (non-fiction)	8
Fiction	8
Economics	8
General Literature	7
History	7
Art (not including large folios)	7
Technical & scientific	6
Medical	5
Public Documents	5
Bound Periodicals	5
Law	4

For each responding library we calculated the average number of volumes per linear foot on its filled or partially filled shelves by dividing its collection size by the number of its filled or partially filled shelves. The results are shown in descending order in Table III. The average of the top

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[1]Metcalf, op. cit., 151-159.

[2]Ellsworth, op. cit., 110.

[3]Metcalf, op. cit., 393.

quartile of the 40 responding libraries is 9.86 volumes to the foot. The average of all the libraries is 7.08. When its book stacks have reached an average of 7.5 volumes to the foot on standard three-foot shelves 86% full we believe a building is very close to its maximum capacity as a working, open-stack library.

THE BASE MONTH. The Definitions and Instructions (OMB No. 51 R 1122) of the 1975-76 HEGIS requests monographic and periodical holdings for the academic year 1975-76. We interpret this to mean the count of holdings in June 1976. To this figure we have added one year's estimated acquisitions (column E, TABLE I) to arrive at estimated holdings in June of 1977, the approximate time of our requested shelving counts. Consequently all projections are made from the base month of June 1977.

Results

The data gathered in our survey and the projections based on them are given in tables I, II, and III. Included are nine libraries already filled to capacity. Among these, the libraries of the University of Buffalo are being moved to new quarters; the library at Purchase has a large amount of space not yet ready for occupancy; the library at Utica-Rome plans to rent additional space; and the Maritime College Library plans extensive weeding.

TABLE I

Column A, Linear Feet of shelving: total available or planned. The shelving in stack areas devoted to books and periodicals, including reserve but excluding government documents shelved separately, microforms, and shelving in technical services areas.

Column B, Linear feet of shelving: filled or partially filled. B= shelves holding books x 3 feet.

Column C, Linear feet of shelving: empty. C=A-B, or the number of totally empty shelves x 3 feet.

Column D, Holdings: current. The collection size in volumes in June 1976 (1976 HEGIS Report, Part I, Sec B, Line #2 (2)),plus one year's estimated increase (E).

Column E, Holdings: annual increase. The three year average annual acquisitions given in the HEGIS Reports for 1973-76.

Column F, Present volumes per foot. The average number of volumes per foot of shelving on filled or partially filled shelves. $F=\frac{D}{B}$.

Column G, Additional capacity based on a standard 7.5 volumes per linear foot. If F is less than 7.5, G=(7.5-F) x B + (7.5xC). If F is larger than 7.5, G=7.5 x C.

Column H, Date of full capacity to the nearest month based on 7.5 volumes per foot capacity and figured from June 1977. $H=\frac{G}{E}$.

Shelf Space Projection Survey - TABLE I

UNIVERSITY CENTERS	A LINEAR FEET OF SHELVING TOTAL AVAILABLE OR PLANNED	B LINEAR FEET OF SHELVING FILLED OR PART. FILLED	C LINEAR FEET OF SHELVING EMPTY	D ESTIMATED HOLDINGS CURRENT	E ESTIMATED HOLDINGS ANNUAL INCREASE	F PRESENT VOLS. PER FOOT	G ADDITIONAL CAPACITY BASED ON 7.5 VOLS. PER FT.	H DATE OF FULL CAPACITY BASED ON 7.5 VOLS. PER FT.
ALBANY (Main)	140,333	118,109	21,924	904,256	50,332	7.66	164,430	SEPT. 1980 3.27 yrs.
ALBANY (Lib. Sch.)	4,788	3,852	936	26,846	1,846	6.97	9,061	APRIL 1982 4.71 yrs.
ALBANY (DCBL)	4,173	3,279	894	16,200	1,200	4.94	15,099	DEC. 1989 12.58 yrs.
BINGHAMTON	159,201	113,394	45,807	752,901	41,901	6.64	441,070	DEC. 1987[1] 10.53 yrs.
BUFFALO (Lockwood)	57,813	57,813	0	449,642[2]	30,964[3]	7.78	0	FULL[4]

[1]All figures are the aggregates of the main and the branch libraries.

[2]This figure does not include 300,000 volumes currently in dead storage.

[3]This acquisitions rate is the average for only two years, 1974-1976.

[4]Except for the libraries of the schools of Law and Library Studies all the other libraries of the University at Buffalo have already reached full capacity. The capacities of the new facilities at Buffalo are not available at this time.

TABLE I

	A	B	C	D	E	F	G	H
BUFFALO (Art)	3,780	3,780	0	37,355	1,540	9.88	0	FULL
BUFFALO (Health Sci.)	24,465	24,465	0	179,159	10,661	7.32	4,404	OCT. 1977 .41 yrs.
BUFFALO (Law)	69,447	55,563	13,884	214,362	4,470	3.86	306,379	DEC. 2045 68.54 yrs.
BUFFALO (Lib. Studies)	2,562	2,562	0	6,997	1,082	2.73	12,221	SEPT. 1988 11.29 yrs.
BUFFALO (Music)	3,486	3,486	0	50,464	3,331	14.48	0	FULL
BUFFALO (Sci.& Eng)	21,693	21,693	0	188,883	8,519	8.71	0	FULL
BUFFALO (Undergrad.)	6,342	6,342	0	62,761	15,690	9.9	0	FULL
STONYBROOK	175,290	115,411	59,877	946,306	46,205	8.2	449,093	FEB.1987[1] 9.72 yrs.
STONYBROOK (Health Sci)	31,397	22,263	9,134	134,337	16,032	6.03	101,232	SEPT. 1983 6.31 yrs.

[1] All figures are aggregates of the main and branch libraries except for Health Sciences. They do not include however 18,525 square feet of unused space on the third floor, north wing, of the main library, with an estimated capacity of 232,000 volumes. Use of this space will extend the estimated date of full capacity (H) to February 1992.

	A	B	C	D	E	F	G	H
BROCKPORT	57,504	51,504	6,000	306,097	22,294	5.94	125,346	JAN. 1982 5.62 yrs.
BUFFALO	108,051	62,942	45,109	394,019	20,000[1]	6.26	416,365	MAR. 1998 20.82 yrs.
CORTLAND	52,794	37,896	14,898	230,069	10,162	6.07	165,926	SEPT. 1993[2] 16.33 yrs.
FREDONIA	42,249	37,866	4,383	271,166	11,006	7.16	45,747	JULY 1981[3] 4.16 yrs.
GENESEO	37,643	29,298	8,345	300,332	16,527	10.25	62,587	MAR 1981 3.79 yrs.
NEW PALTZ	36,888	32,388	4,500	281,729	17,000	8.7	33,750	MAY 1979 1.99 yrs.
OLD WESTBURY	13,380	13,317	63	82,573	8,315	6.2	17,785	JULY 1979 [4] 2.14 yrs.
ONEONTA	68,496	43,746	24,750	326,540	20,127	7.46	187,375	SEPT 1986 9.31 yrs.

[1]The three year average acquisitions (1973-76) is 25,766. The lower figure is an estimate based on expected increases in OCLC costs and the purchase of non-book materials paid for out of the book fund.

[2]This projection does not reflect planned weeding of 1,500 volumes per year.

[3]An on-campus storage facility is being planned; weeding will be intensified.

[4]Current holdings (D) includes 2,672 volumes of uncataloged abstracts but not periodicals, most of which are unbound. Linear feet of shelving (A, B, and C) do not include 5,343 feet devoted to periodicals. The projection (H) refers only to the space devoted to monographs.

	A	B	C	D	E	F	G	H
OSWEGO	82,587	48,810	33,777	259,729	13,473	5.32	359,732	MAR 1995 18.8 yrs.
PLATTSBURGH	60,901	30,255	30,646	278,430	11,962	9.2	229,845	AUG. 1996 19.21 yrs.
POTSDAM	37,675	30,691	6,984	241,785	11,774	7.88	52,380	NOV. 1981 4.46 yrs.
PURCHASE	18,435	17,250	1,185	132,250	13,030	7.67	8,889	FEB 1978[1] .68 yrs
UTICA-ROME	11,070	10,254	816	78,271	13,449	7.63	6,120	NOV 1977 .46 yrs
SPECIALIZED COLLEGES								
DOWNSTATE MEDICAL	46,530	45,018	1,512	240,401	5,033	5.34	108,579	DEC 1998[2] 21.57 yrs
UPSTATE MEDICAL	14,974	14,974	0	130,532	5,697	8.72	0	FULL[3]
ENVIR. SCI. FORESTRY	28,149	23,892	4,257	67,102	3,704	2.81	143,980	APRIL 2016 38.87 yrs.

[1]The library is unfinished. This projection is based on the space now occupied.

[2]Weeding is reported to be almost equal to acquisitions.

[3]Full capacity has already been reached. The library plans to install electrical compact storage and to move into space adjacent to the library.

	A	B	C	D	E	F	G	H
MARITIME	8,001	7,680	321	64,013	2,653	8.34	2,408	APRIL 1978[1] .91 yrs.
OPTOMETRY	5,208	2,577	2,631	14,752	1,825	5.72	24,320	SEPT 1990[2] 3.33 yrs.
AGRICULTURAL AND TECHNICAL COLLEGES								
ALFRED	7,698	7,554	144	54,166	1,922	7.17	3,573	APRIL 1979 1.86 yrs
CANTON	6,241	5,041	1,200	46,914	2,327	9.31	9,000	APRIL 1981[3] 3.87 yrs
COBLESKILL	STATISTICS	NOT	AVAILABLE					
DELHI	8,244	6,459	1,785	41,371	2,365	6.41	20,428	JAN 1986 8.64 yrs
FARMINGDALE	10,909	9,071	1,838	83,101	4,640	9.16	13,785	MAY 1980[4] 2.97 yrs.
MORRISVILLE	STATISTICS	NOT	AVAILABLE					

[1]The library has withdrawn 1,873 volumes since April 1973 and plans to intensify weeding in the future.

[2]Increased enrollment and a new Phd program are expected to increase acquisitions.

[3]Current holdings (D) do not include periodicals, most of which are unbound. Linear feet of shelving (A,B,& C) do not include 7,477 feet devoted to periodicals. The projection (H) refers only to space now devoted to monographs.

[4]Weeding keeps the collection approximately stable.

	A	B	C	D	E	F	G	H
ALFRED (Ceramics)	11,973	9,411	2,562	51,861	2,928	5.51	37,943	MAY 1990 12.96 yrs.
CORNELL (Agric.)	76,248	69,141	7,107	482,592	13,035	6.98	84,206	APRIL 1984[1] 6.85 yrs.
CORNELL (Indus.& Lab)	14,127	12,303	1,824	117,533	2,536	9.55	13,680	OCT 1982[1] 5.39 yrs.
CORNELL (Veterinary)	11,443	11,263	180	63,342	2,082	5.62	22,424	MAR 1988[1] 10.77 yrs.

[1]Cornell is planning a new storage facility to be built in 1978 with a capacity for five years of acquisitions.

Estimated dates of full capacity in chronological order.

1.	FULL	University at Buffalo (except for Law and Library Studies)
2.	FULL	Upstate Medical
3.	NOV 1977	Utica-Rome
4.	FEB 1978	Purchase
5.	APRIL 1978	Maritime
6.	APRIL 1979	Alfred (Agricultural and Tech.)
7.	MAY 1979	New Paltz
8.	JULY 1979	Old Westbury
9.	MAY 1980	Farmingdale
10.	SEPT 1980	Albany (Main)
11.	MAR 1981	Geneseo
12.	APRIL 1981	Canton
13.	JULY 1981	Fredonia
14.	NOV 1981	Potsdam
15.	APRIL 1982	Albany (Library School)
16.	OCT 1982	Cornell (Industrial and Labor Relations)
17.	JAN 1982	Brockport
18.	SEPT 1983	Stony Brook (Health Sciences)
19.	APRIL 1984	Cornell (Agriculture and Life Sci.)
20.	JAN 1986	Delhi
21.	SEPT 1986	Oneonta
22.	FEB 1987	Stony Brook (except for Health Sci.)
23.	DEC 1987	Binghamton
24.	MAR 1988	Cornell (Veterinary)
25.	SEPT 1988	University at Buffalo (Lib. Studies)
26.	DEC 1989	Albany (DCBL)
27.	MAY 1990	Alfred (Ceramics)
28.	SEPT 1990	Optometry
29.	SEPT 1993	Cortland
30.	MAR 1995	Oswego
31.	AUG 1996	Plattsburgh
32.	MAR 1998	Buffalo College
33.	DEC 1998	Downstate Medical
34.	APRIL 2016	Environmental Sci. and Forestry
35.	DEC 2045	University at Buffalo (Law)

Average number of volumes per foot shelved on filled or partially filled shelves. High figures indicate crowded shelves at time of reporting but are not indicative of the number of empty shelves still unused.

	VOLS PER FOOT	
1.	14.48	Buffalo (Music)*
2.	10.25	Geneseo
3.	9.9	Buffalo (Undergrad. Lib)*
4.	9.88	Buffalo (Art)*
5.	9.55	Cornell (Indus. and Lab Relations)
6.	9.2	Plattsburgh
7.	9.16	Farmingdale
8.	8.72	Upstate Medical*
9.	8.71	Buffalo (Sci. and Engineering)*
10.	8.7	New Paltz
11.	8.34	Maritime*
12.	8.2	Stony Brook (minus Health Sci.)
13.	7.88	Potsdam
14.	7.78	Buffalo (Lockwood)*
15.	7.67	Purchase*
16.	7.66	Albany (Main)
17.	7.63	Utica-Rome*
18.	7.46	Oneonta
19.	7.32	Buffalo (Health Sciences)
20.	7.17	Alfred (Agricultural and Tech.)
21.	7.16	Fredonia
22.	6.98	Cornell (Agricultural and Life Sci.)
23.	6.97	Albany (Lib School)
24.	6.64	Binghamton
25.	6.41	Delhi
26.	6.26	College at Buffalo
27.	6.07	Cortland
28.	6.03	Stony Brook (Health Sci.)
29.	5.94	Brockport
30.	5.72	Optometry
31.	5.62	Cornell (Veterinary Medicine)
32.	5.51	Alfred (Ceramics)
33.	5.34	Downstate Medical
34.	5.32	Oswego
35.	4.94	Albany (Downtown Campus Branch Lib.)
36.	3.97	Old Westbury
37.	3.86	Buffalo (Law)
38.	3.42	Canton
39.	2.81	Environmental Sci. and Forestry
40.	2.73	Buffalo (Library Studies)

*Libraries that have reached maximum capacity according to available figures.